

# *Brachypodium distachyon* resequencing project

updated 4-14-2011

Thanks to the generous support of the Department of Energy Joint Genome Institute (JGI), a wealth of genomic sequence information for *Brachypodium distachyon* is becoming available. In 2010, the genome sequence of the reference diploid inbred line **Bd21** was published in *Nature*. Since then, JGI has resequenced the genomes of six additional diploid lines: **Bd21-3**, **Bd3-1**, **Bd30-1**, **Bd1-1**, **Koz-3**, and **BdTR12C**. We are analyzing this initial data set, and sequences for these lines will be available through [www.brachybase.org](http://www.brachybase.org) shortly.

Recently, JGI approved a proposal to resequence the genomes of 50 more *Brachypodium* lines <http://www.jgi.doe.gov/sequencing/cspseqplans2011.html>. The raw data and JGI's initial analysis will be released as soon as possible, with the understanding that the labs involved in the project reserve the right to the first publication of global studies, as well as certain targeted studies, based on their work.

In selecting lines for genome resequencing, the following criteria are being considered:

1. Each line must be a diploid of the species *Brachypodium distachyon*. (Unfortunately, the interesting topics of polyploidy in *B. distachyon* and perenniality in species such as *B. sylvaticum* are beyond the scope of this resequencing project.)
2. The line must be freely available to the research community. (Lines governed by Material Transfer Agreements or similar restrictions on use and distribution are not eligible.)
3. The lines, as a set, should maximize the genetic and phenotypic diversity represented.

So far, 40 of the proposed 50 additional lines have been chosen, although lines beyond the initial set are still tentative selections. These lines are:

In the initial set:

<b>Bd2-3</b>	<b>BdTR3C</b>	<b>ABR2</b>	<b>Mig1</b>
<b>Bd18-1</b>	<b>BdTR5I</b>	<b>ABR3</b>	<b>Mon1</b>
<b>Adi-10</b>	<b>BdTR9K</b>	<b>ABR5</b>	<b>Mur1</b>
<b>Adi-12</b>	<b>BdTR10C</b>	<b>ABR6</b>	<b>Sig1</b>
<b>Gaz-8</b>	<b>BdTR11I</b>	<b>ABR7</b>	<b>Uni2</b>
<b>BdTR2G</b>	<b>BdTR13C</b>	<b>Arn1</b>	

Added as of March 3, 2011, but subject to change:

<b>Adi-2</b>	<b>Kah-5</b>	<b>BdTR8I</b>
<b>Bis-1</b>	<b>Tek-4</b>	<b>BdTR11A</b>
<b>Kah-1</b>	<b>BdTR2B</b>	<b>BdTR11G</b>

Added as of March 28, 2011:

5 lines from Georgia (courtesy of Ana Caicedo, UMass) and

2 lines from southern Spain (courtesy of John Doonan, John Innes Centre)

**Bd21**, the source of the reference genome, will also be resequenced as a quality control. The remaining 10 lines will be selected in the next couple of months, and we welcome nominations from the community. To nominate a line, please send an e-mail to Ludmila Tyler [ludmilatyler@gmail.com](mailto:ludmilatyler@gmail.com) or Sean Gordon [sean.gordon@ars.usda.gov](mailto:sean.gordon@ars.usda.gov). Please include the name of the line, a description (especially if none has been previously published), and the rationale for including this line in the resequencing project. Because of the large amount of DNA required for resequencing, at least 200 seeds should be readily available for each nominated line.

This site will be updated periodically and announcements sent to the *Brachypodium* community via the *Brachypodium* mailing list at [www.brachypodium.org](http://www.brachypodium.org).